

ABSTRACT OF THE DISCLOSURE

A process and a kit are provided for detecting differences in two or more samples of protein, including proteins bearing post-translational modifications and peptides. Proteins are prepared, for example, from each of a different group of cell samples or body fluid samples to be compared. Each protein extract is labeled with a different one of a luminescent dye from a matched set of dyes. The matched dyes have generally the same ionic and pH characteristics but emit light at different wavelengths to exhibit a different color upon luminescence detection. The labeled protein extracts are mixed together and separated together by electrophoresis or a chromatographic method. The separation is observed to detect proteins unique to one sample or present in a greater ratio in one sample than in the other. Those unique or excess proteins will fluoresce the color of one of the dyes used. Proteins common to each sample migrate together and fluoresce the same.